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FITZPATRICK CELLA HARPER & SCINTO 30 ROCKEFELLER PLAZA NEW YORK, NY 10112			DOTE, JANIS L	
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			1756	
DATE MAILED: 01/27/2004				

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	09/987,490	KOMOTO ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Janis L. Dote	1756	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 21 November 2003.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 48,49,51,53-58,60,61,63,64 and 67-73 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 48,49,51,53-58,60,61,63,64 and 67-73 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 31 October 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. §§ 119 and 120

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☒ All   b) ☐ Some \* c) ☐ None of:  
1. ☒ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.  
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 112103.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

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1. The examiner acknowledges the cancellation of claims 1-47, 50, 52, 59, 62, 65, and 66, and the amendments to claims 48, 51, 53, 54, 57, 61, 67, 68, 71, and 73, filed on Aug. 6, 2003 (Amdt080603). Claims 48, 49, 51, 53-58, 60, 61, 63, 64, and 67-73 are pending.

The amendment to the drawings filed in Amdt080603 was not in compliance with 37 CFR 1.121 for the reasons discussed in the "Notice of Non-compliant Amendment" mailed on Oct. 15, 2003. Thus, the amendment to the drawings in Amdt080603 has not been entered.

2. The examiner notes that the amended paragraph beginning at page 80, line 7, of the specification, filed in Amdt080603, states that the MECHANOFUSION SYSTEM is made by "Nara Kikai Seisakusho K.K." The amended paragraph inadvertently replaced the originally disclosed manufacturer "Hosokawa Micron K.K." The amended paragraph is not in compliance with 37 CFR 1.121 because applicants did not properly indicate the replacement of the manufacturer. To ensure an unambiguous record of the amendments to the specification, the examiner suggests that the amended paragraph be deleted and rewritten as a new paragraph.

In the interest of compact prosecution, the amended paragraph has been considered as though properly prepared.

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3. The replacement drawing sheets were received on Oct. 31, 2003 (Amdt103103). The drawing sheets are acceptable.

4. The objections to the drawings set forth in the office action mailed on Mar. 4, 2003 (CTNF030403), paragraphs 2 and 3, have been withdrawn in response to the replacement drawing sheets filed in Amdt103103.

The objection to the specification, set forth in CTNF030403, paragraph 4, items (1) and (2), have been withdrawn in response to the amended paragraphs beginning at page 130, line 23, and page 148, line 6, of the specification filed in Amdt080603.

The objections to the specification, set forth in CTNF030403, paragraph 5, have been withdrawn in response to the cancellation of claims 3, 13, 16, 18, 24, 25, 28, 33, 45, 50, and 52, and the amendments to claims 53, 61, and 71, filed in Amdt080603.

The objections to claims 1, 28, 29, 47, 57, 61, and 73, set forth in CTNF030403, paragraph 9, have been withdrawn in response to the cancellation of claims 1, 28, 29, and 47, and the amendments to claims 57, 61, and 73 filed in Amdt080603.

The rejections of claims 20, 23, 31, 50-52, 59, and 68 under 35 U.S.C. 112, second paragraph, set forth in CTNF030403,

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paragraph 11, have been withdrawn in response to the cancellation of claims 20, 23, 31, 50, 52, and 59, and the amendments to claims 51 and 68, filed in Amdt080603.

The rejections of claims 31, 52, and 59 under 35 U.S.C. 112, first paragraph, set forth in CTNF030403, paragraphs 13 and 14, have been mooted by the cancellation of claims 31, 52, and 59 filed in Amdt080603.

The rejections under 35 U.S.C. 103(a) of claims 1-47 over European Patent 1,128,225 A2 (EP'225) combined with the other cited prior art, set forth in CTNF030403, paragraphs 20-23, have been mooted by the cancellation of claims 1-47 filed in Amdt080603.

The rejections under the judicially created doctrine of obviousness-type double patenting of claims 1-47 over claims 1-57 of copending Application No. 09/788,399, which issued as US Patent No. 6,596,452 B2, in view of the other cited prior art, set forth in CTNF080403, paragraphs 29-32, have been mooted by the cancellation of claims 1-47 filed in Amdt080603.

5. The amendment filed on Aug. 6, 2003 (Amdt080603), is objected to under 35 U.S.C. 132 because it introduces new matter into the disclosure. 35 U.S.C. 132 states that no amendment shall introduce new matter into the disclosure of the invention.

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The added material which is not supported by the original disclosure is as follows:

The amended paragraph beginning at page 80, line 7, of the specification, filed in Amdt080603, states that the MECHANOFUSION SYSTEM is made by "Nara Kikai Seisakusho K.K." However, the originally filed specification discloses that the MECHANOFUSION SYSTEM is made by the manufacturer "Hosokawa Micron K.K." Applicants have not indicated where in the originally filed specification there is antecedent basis that the SYSTEM was made by Nara Kikai Seisakushi K.K.

Applicants are required to cancel the new matter in the reply to this Office Action.

6. The disclosure is objected to because of the following informalities:

(1) The specification at page 117, line 27, to page 118, line 1, discloses an elastic conductive roller having an Asker C hardness of "at most 50 deg., preferably 25-50 deg." The instant specification does not disclose how the Asker C hardness is determined, let alone any standard used to determine the hardness. As shown in the prior art, there is more than one standard to determine Asker C hardness. See, for example, US 6,052,549 (Shimura). Shimura at col. 4, lines 32-38, defines

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its Asker C hardness as that "measured by a spring type ASKER C hardness meter (manufactured by Kobunshi Keiki K.K.) according to JIS K6050. In the present invention, the hardness is measured under a load of 500 g directly for an unfinished charging roller . . ." (emphasis added). Similarly, US 6,035,171 (Takaya) determines a hardness of 68 degrees according to JISK-6301 with a hardness meter Asker C and a load of 1 kgf. Takaya, col. 15, lines 26-27. US 6,459,878 B1 (Tomoyuki) determines a hardness of 55 degrees or lower using an ASKER-C hardness Meter under a load of 600 g. Tomoyuki, col. 11, lines 63-65. US 6,094,550 (Kido) discloses that the "hardness of the developer holder 3 should be preferably be 65 or under when measured with an Asker C (a rubber hardness meter of Koubunshi Keiki Col, Ltd. Conforming to Japan Rubber Association Standard **SRIS 0101**). This hardness is *equivalent* to 40° or under in the hardness conforming to **JIS K6301**, and *equivalent* to about 26° or under in the hardness conforming to **ASTM D2240**" (emphasis added). Kido, col. 19, line 62, to col. 20, line 2. The instant specification, in contrast to the prior art, does not disclose that the Asker C hardness is determined by any of these standards. The Asker C degree of hardness for a given sample appears to depend on the load applied and standard used. US 6,432,599 B1 (Yuasa) discloses

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that the Asker "C type indicates a difference in rubber hardness of an object of interest as a displacement degree when a given load is applied." Yuasa, col. 41, lines 41-48. US 5,804,309 (Itoh) determines the Asker C hardness of a charging roller using a spring-type hardness tester according to JIS-S-6050, "rubber-plastic" hardness tester Asker C-type. Itoh discloses that when "a force is applied to the tester in the vertical position, so that a total load of 1 kg acts on the roller . . . [t]he reading of the tester represents the Asker C hardness upon application of the force." Itoh, col. 4, line 61, to col. 5, line 16. Because the specification does not disclose the conditions under which the hardness is determined, the disclosure is inadequate to inform the ordinary worker in the art of all the information necessary to make and use the claimed invention.

In view of the evidence on the present record, because the specification does not disclose how the Asker C hardness is determined, particularly the load, nor what standard is used to determine the rubber hardness, it would require undue experimentation for a person having ordinary skill to determine the hardness recited in the instant claims.

On the present record, the experimental conditions under which the Asker C rubber hardness are determined as essential



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subject matter since they are necessary to describe and enable the instant claimed subject matter. Essential subject matter must be disclosed in the specification as filed.

Applicants are reminded that essential subject matter cannot be incorporated by reference to non-patent literature, but must be fully disclosed in the specification as filed. MPEP 608.01(p)A., 8th edition, Rev. Feb. 2003.

(2) The use of trademarks, e.g., "Coulter MULTISIZER" [sic: COULTER MULTISIZER] in the amended paragraph beginning at page 108, line 8, of the specification, filed in Amdt080603, has been noted in this application. The trademarks should be capitalized wherever they appear and be accompanied by the generic terminology. This example is not exhaustive. Applicants should review the entire specification for compliance.

Although the use of trademarks is permissible in patent applications, the proprietary nature of the marks should be respected and every effort made to prevent their use in any manner which might adversely affect their validity as trademarks.

(3) The amended paragraph beginning at page 80, line 7, of the specification, filed in Amdt080603, recites the misspelled

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term "KRYOPRON." The originally filed specification recites the term "Krypron."

(4) The recitation "Turboplex TURBOPLEX in the amended paragraph beginning at page 133, line 26, of the specification, filed in Amdt080603.

Appropriate correction is required.

Applicants' arguments filed in Amdt080603 with respect to items (1) and (2) have been fully considered but they are not persuasive.

(1) Applicants assert that based on the disclosure in Tomoyki'878 and in Shimura'549, which has a common assignee, "an artisan in this field would understand that Asker C hardness for an electroconductive roller is measured with an Asker C spring type hardness meter according to JIS S6050 at an appropriate load." Applicants submit that experimental conditions for Asker C hardness are well known by the skilled artisan.

However, there is no evidence on the present record to support applicants' assertion that the Asker C hardness values disclosed in the instant specification and recited in the instant claims were determined by an "Asker C spring type hardness meter according to JIS S 6050 at an appropriate load." The disclosure of "Asker C hardness" does not necessarily mean that the hardness values are measured on the Asker C spring type

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hardness meter, as asserted applicants. US 6,485,878 B2 (Nagase'878) at col. 7, lines 10-13, determines "Asker C hardness" values on a rubber sample having a thickness of 12 mm by employing a "Type A" durometer in accordance with JIS K6253-1997 or ISO 7619.

Moreover, as discussed in the objection, the Asker C degree of hardness for a given sample appears to depend on the load applied and standard used. The instant specification does not disclose any conditions, let alone the applied load, under which the Asker C hardness values are determined.

In addition, as discussed in the objection, the value of the Asker C hardness appears also to depend on the standard used. The evidence discussed in the objection and above shows that there are many standards used to determine Asker C hardness values in addition to JIS S 6050, e.g., JIS K6301, JIS K6253-1997, ISO 7619, ASTM D2240, etc. The instant specification does not disclose how the hardness values are determined, let alone any standard used to determine the hardness. Nor does the specification disclose the instrument used to determine the hardness.

Accordingly, for the reasons discussed in the objection and above, the disclosure in the instant specification does not provide sufficient guidance to a person having ordinary skill in

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the art to make or use the claimed invention without undue experimentation.

(2) Applicants assert that the amendments to the specification capitalize the trademarks disclosed in the specification.

However, as noted in the objection, applicants' amendments did not capitalize all the trademarks disclosed in the specification. The term "COULTER" is a registered trademark with the USPTO. See the USPTO Trademark Electronic Search System (TESS) for the work mark COULTER. Accordingly, the objection stands.

7. The examiner has determined that the term "electrostatic latent-image forming means" recited in the instant claims is a means-plus-function limitation covered by the 35 U.S.C. 112, sixth paragraph.

The only definition of the electrostatic latent-image forming means is provided in Figs. 2 and 3, and at page 159, lines 9-15, of the specification, and equivalents thereof. Figs. 2 and 3 comprise "a laser light **L** from a laser light source to form an electrostatic image." See the specification, page 110, lines 11-12. The specification at page 159, discloses that the "exposure means [to form an electrostatic latent

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image] is not limited to a laser scanning exposure means . . . but can be ordinary analog imagewise exposure means or other light-emitting devices, such as LED, or a combination of light source, such as a fluorescent lamp, and a liquid crystal shutter."

8. The examiner has determined that the following terms are not covered by 35 U.S.C. 112, sixth paragraph because such "means for" are modified by sufficient structure, material, or acts for achieving the specified function. See MPEP 2181.

(1) "developing means including a toner-carrying member for transferring a magnetic toner carrier on the toner-carrying member";

(2) a charging means for charging the image-bearing member which comprises "a charging member supplied with a voltage and abutted against the image-bearing member to form a contact nip with the image-bearing member [claim 1: at a contact position]";

(3) a transfer "means for electrostatically transferring the toner image on the image-bearing member onto a transfer member via or without via an intermediate transfer member"; and

(4) "developing means also functions as a means for recovering a portion of the magnetic toner remaining on the image-bearing member."

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9. The following phrases and terms have been defined in the instant specification:

(1) The term "silicon-based" recited in instant claims 48 and 53 is defined as meaning "that the material comprises silicon as a principal element." See the specification, page 35, lines 17-18.

(2) The term "non-single crystal material" recited in instant claims 48, 53, and 54 is defined as a material "principally in an amorphous state but can contain a minor proportion of microcrystalline or polycrystalline material." See the specification, page 35, lines 9-16.

(3) The phrase "0.05 to 3.00% of isolated iron-containing particles" recited in instant claim 48 is defined in the specification at page 41, line 14, to page 44, line 4. The term "isolated iron-containing particles" is defined as "particles of iron or iron compound . . . isolated from magnetic toner particles." See the specification, page 41, lines 15-18. The percentages of isolated iron-containing particles recited in the instant claims are defined as  $100 \times \{(\text{number of atomic luminescence (AL) of Fe alone}) / [(\text{number of AL of Fe simultaneous with AL of C}) + (\text{number of AL of Fe alone})]\}$ . See the specification, page 41, lines 22, to page 42, line 9. In the case of a magnetic toner particle comprising magnetic iron oxide

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particles, the specification at page 42, lines 10-17, discloses that the "simultaneous luminescence of carbon atom and iron atom means a luminescence from a toner particle containing magnetic iron oxide dispersed therein, and the luminescence of only iron atoms means a luminescence from an isolated iron-containing particle." In other words, the "percentage of isolated iron-containing particles" is the ratio of the number of iron-containing particles present in the magnetic toner that are not dispersed in the magnetic toner to the total number of iron-containing particles (i.e., the sum of the number of iron-containing particles dispersed in the magnetic toner particles and the number of iron-containing particles that are not dispersed in the magnetic toner).

(4) The term "average circularity" recited in instant claim 48 is defined by formula (2) at page 38, line 26. The determination of the average circularity is described in the specification at page 38, line 9, to page 40, line 19, of the specification.

In Amdt080603, applicants did not state that they disagreed with the definitions set forth supra.

10. The following is a quotation of the second paragraph of 35 U.S.C. 112:

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The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

11. Claims 48, 49, 51, 53-58, 60, 61, 63, 64, and 67-73 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 48 and claims dependent thereon are indefinite in the phrase "an Asker C hardness of at most 50 deg." because it is not clear what is the scope of said limitation. Neither the instant claims nor the instant specification define the conditions under which the recited Asker C hardness are determined. See the discussion in paragraph 6, item (1), supra.

Claim 48 is also indefinite in the phrase "magnetic particles having a volume-basis median diameter of 10-50" because it is not clear what is the length unit of the diameter, e.g., microns, nanometers, etc.

Claim 54 is indefinite in the phrase "a surfacemost layer comprises a non-single crystal carbon hydride film" (emphasis added) because it is not clear what apparatus component recited in instant claim 48, e.g., the image-bearing member, the



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charging member, etc., has the surfacemost layer recited in claim 54.

Claim 60 and 61 are indefinite in the phrase "the charging member is a roller member having . . ." (emphasis added) because it is not clear whether "a roller member" recited in instant claims 60 and 61 refers to the roller member having an Asker C hardness recited in instant claim 48 or to another materially different roller.

Claim 67 is indefinite in the phrase "wherein the magnetic particles have a volume resistivity . . ." (emphasis added) for lack of unambiguous antecedent basis. It is not clear whether the magnetic particles recited in instant claim 67 refer to the magnetically constrained magnetic particles of the magnetic brush charging member or to the magnetic toner particles recited in instant claim 48.

Applicants' arguments in Amdt080603 regarding the rejection of claim 48 and claims dependent thereon with respect to the phrase "Asker C hardness . . ." have been addressed in paragraph 6, supra.

12. The following is a quotation of the first paragraph of 35 U.S.C. 112:

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The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

13. Claims 48, 49, 51, 53-58, 60, 61, 63, 64, and 67-73 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

Instant claim 48 and claims dependent thereon recite an "Asker C hardness of at most 50 deg."

The instant specification does not disclose adequately how the Asker C hardness is determined. The specification at page 117, line 27, to page 118, line 1, merely discloses the values of Asker C hardness recited in the instant claims. The specification is silent as to the experimental conditions under which the hardness is determined. The specification does not disclose that the Asker C hardness is determined by any particular known standard. As discussed in paragraph 6, item (1), supra, the Asker C hardness appears to be dependent on the standard used and on the load applied to determine the

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hardness. The specification gives no guidance on what load is used. The working examples merely recite the values of Asker C hardness. Nor does the specification disclose what standard should be used to determine the Asker C hardness. In addition, as discussed in paragraph 6 above, the prior art discloses more than one standard to determine Asker C hardness. Moreover, the standards do not appear to be equivalent. Because of (1) the infinite choices of applied loads, (2) the different standards used in determining the Asker C hardness, and (3) the total lack of guidance from the instant specification, it would require undue experimentation for a person having ordinary skill to determine the experimental parameters needed to obtain the instant claimed numerical ranges of Asker C hardness.

Applicants' arguments in Amdt080603 have been addressed in paragraph 6, supra.

14. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

15. Claim 53 is rejected under 35 U.S.C. 102(e) as being anticipated by US 2002-00115012 A1 (Hashizume'012).

Hashizume'012 discloses an imaging apparatus comprising:

(1) An image bearing member that is within the compositional and structural limitations recited in instant claim 53. The member comprises an electroconductive support, a photoconductor layer comprising a silicon-based non-single crystal material, and a "surfacemost" layer comprising a non-single crystal carbon hydride film. Paragraphs 0034, 0035, and 0087.

(2) A charging means for charging the image-bearing member comprising a charging member supplied with a voltage and abutted against the image-bearing member to form a contact nip with the image-bearing member. Paragraphs 0142-0143. The charging means can be a magnetic brush that is within the compositional limitations recited in instant claim 53. Paragraphs 0143, 0147, and 0149. The charging means can be rollers that are within the compositional and structural limitations recited in instant claim 53. Paragraphs 0167-0168, 0170-0173, and 0175, and Fig. 5. The charging means further comprises a DC voltage source. Fig. 5 and paragraph 0170.

(3) A laser light device as the electrostatic latent-image forming means, which is within the definition disclosed in the instant specification. Paragraph 0239 and Fig. 7, reference sign 710. See paragraph 7, supra.

(4) A developing means that comprises a toner-carrying member for transferring magnetic toner. See Figs. 4-7.

(5) A transfer means that is within the structural limitations recited instant claim 53. See Fig. 7 and paragraph 0240.

Hashizume'012 does not disclose the following functional limitations: (1) the image-bearing member is charged to a particular potential as recited in instant claim 53; and (2) transferring a particular magnetic toner recited in instant claim 53. However, the instant claim does not positively recite that apparatus comprises the particular magnetic toner recited in the instant claim. For example, instant claim 48, from which claim 53 depends, merely recites "a toner-carrying member for transferring a magnetic toner" (emphasis added)," which does not distinguish the structural elements in the instantly claimed apparatus from those in Hashizume'012's apparatus. Furthermore, the recitation "image-bearing member . . . is charged to a potential of . . ." recited in instant claim 48 does not distinguish the structural elements in the instantly claimed apparatus from those in Hashizume'012's apparatus. See MPEP § 2114. "A claim containing a 'recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a

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prior art apparatus' if the prior art apparatus teaches all the structural limitations of the claim." MPEP 2114 and cases cited therein. In addition, a material (i.e., the magnetic toner) worked upon by the apparatus does not limit the apparatus claims. "Inclusion of material or article worked upon by a structure being claimed does not impart patentability to the claims." See MPEP § 2115 and cases cited therein. It is well settled, as stated in Ex parte Masham, 2 USPQ2d 1647, 1648 (Bd. Pat. App. & Int. 1987) that "a recitation with respect to the material intended to be worked upon by a claimed apparatus does not impose any structural limitations upon the claimed apparatus which differentiates it from the prior art apparatus satisfying the structural limitations of that claimed." Accordingly, functional language regarding the particular magnetic toner and the potential recited in instant claims instant claim 53 does not distinguish the apparatus disclosed by Hashizume'012.

16. Claim 53 is rejected under 35 U.S.C. 103(a) as being unpatentable over European Patent 1,128,225 A2 (EP'225) combined with US 5,728,800 (Ohba).

EP'225 discloses an apparatus that comprises a contact charging means, an electrostatic latent-image forming means, a developing means, and a transfer means that are within the

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structural and compositional limitations recited in the instant claim. See EP'225, page 31, lines 28-38, page 39, lines 20-25, Figs. 1-3 and 6, and the text explaining Fig. 6 at page 52, line 37, to page 53, line 55. The electrostatic latent-image forming means comprises a laser 123, which meets the definition disclosed in the instant specification. See EP'225, page 31, lines 32-33; and paragraph 7, supra. The developing means 140 comprises a toner-carrying member to transfer a magnetic toner to the latent image on the image-bearing member. EP'225, page 31, lines 28-29, and Fig. 1. EP'225's contact charger is within the limitations recited in instant claim 53. See EP'225, page 32, lines 11, 15-23, and 35-36, and page 33, lines 24-31.

EP'225 discloses a magnetic toner that is within the compositional limitations recited in instant claim 53. See the production of magnetic toner 2 at page 42, and in Table 2 at page 58. Magnetic toner 2 comprises magnetic toner particles comprising a binder resin, a surface-treated magnetic iron oxide 1 with a silane coupling agent, and an ester wax; and hydrophobic silica particles and conductive powder 2. The magnetic toner has a weight-average particle size of 7.3  $\mu\text{m}$ , an average circularity of 0.981, a modal circularity of 1.00, and 0.25% of liberated iron-containing particles. See Table 2, and page 46, lines 32-33. The particle size, average circularity,

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and modal circularity are within the respective ranges recited in instant claim 53.

EP'225 does not exemplify an image-bearing member as recited in instant claim 53. However, EP'225 discloses that the image-bearing member used in its method can be a photosensitive member comprising amorphous silicon. Page 35, line 19.

Ohba discloses an image-bearing member comprising an electroconductive cylindrical support, a photoconductive layer comprising amorphous silicon and a "surfacemost" layer comprising a non-single crystal material different from the photoconductive layer. The photoconductive layer has a thickness of 2 to 24  $\mu\text{m}$  "to permit a low charging potential and electric field development." Col. 5, line 60, to col. 6, line 2; and col. 16, lines 1-24. Ohba discloses that the image-bearing member does not need a heater. Col. 6, lines 42-47 and 60-63. Ohba discloses that its image-bearing member is charged to have an initial potential of 450 V or less, and that the member can be uniformly charged with a charging roller or a charging brush. Col. 5, lines 52-55; and col. 6, lines 35-41 and 56-57. Ohba discloses that the electrostatic latent images formed on its image-bearing member can be developed with a single component conductive magnetic toner. Col. 6, lines 29-34. Ohba discloses that its image-bearing member



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eliminates "dark attenuation increase" and reduction of photosensitivity or resolution. Col. 5, lines 15-22. Ohba discloses that its image-bearing member has high durability and provides high contrast, high quality images free from fog. Col. 5, lines 30-35 and 42-49.

It would have been obvious for a person having ordinary skill in the art to use Ohba's image-bearing member comprising amorphous silicon as the image-bearing member in the apparatus disclosed by EP'225, because that person would have had a reasonable expectation of successfully obtaining an image forming apparatus that provides high contrast, high quality images without fog for a long period of time.

17. Applicants' arguments filed in Amdt080603 with respect to the rejections set forth in paragraphs 15 and 16 above have been fully considered but they are not persuasive.

Applicants assert that Hashizume'012 and EP'225 are not prior art. Applicants assert that they have perfected their claim to foreign priority under 35 U.S.C. 119, by filing a verified English-language translation of the priority document, Japanese patent application No. 348,146/2000, on Aug. 6, 2003 (FRTRANS080603). Applicants argue that the translation provides

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antecedent basis for the subject matter recited in the instant claims.

However, Hashizume'012 and EP'225 are prior art with respect to instant claim 53. The translation does not provide an adequate written description of the subject matter recited in instant claim 53 as required under 35 U.S.C. 112, first paragraph. The translation discloses a photoconductor comprising a "photoconductor layer comprising a non-single crystal material primarily composed of silicon atoms and a uppermost layer comprising a non-single crystal material different from the photoconductor layer in its composition" (emphasis added). See the translation, page 14, line 23, to page 15, line 3. Instant claim 53 recites a photoconductor layer comprising a silicon-based non-single crystal material and a surfacemost layer comprising a non-single crystal material. The surfacemost layer recited in instant claim 53 is broader than the uppermost layer disclosed in the translation, because it includes layers comprising a non-single crystal material that is not different from the composition of the photoconductor layer.

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18. Claims 48, 49, 51, 53-58, 63, 64, and 67-73 are rejected under 35 U.S.C. 103(a) as being anticipated by US 6,081,681 (Nagase) combined with European Patent 989470 A2 (EP'470).

Nagase discloses an imaging apparatus comprising:

(1) An electrophotographic photosensitive member 1, which can be an amorphous silicon photosensitive member having a surface volume resistivity of approximately  $10^{13} \Omega \cdot \text{cm}$ . Fig. 6, col. 8, lines 24-26, and col. 16, lines 62-64.

(2) A contact charging member for charging the photosensitive member supplied with a DC voltage and abutted against the image-bearing member to form a contact nip with the image-bearing member. The charging member is a conductive charging brush 2 made of electroconductive rayon fiber. Fig. 6; col. 8, lines 32-46; col. 10, lines 49-59; and col. 11, lines 18-32. Nagase further discloses that electroconductive particles are present between the charging brush and the photosensitive member, wherein the electroconductive particles may be present in an amount of  $10^3$  to  $10^5$  particles/ $\text{mm}^2$ . Col. 9, lines 51-61; col. 14, lines 52-56; col. 15, line 53, to col. 16, line 2; and Table 1 at col. 12. The charging brush meets the limitations recited in instant claims 48, 55, and 56.

(3) A laser unit 2 as the electrostatic latent-image forming means, which is within the scope of the definition

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disclosed in the instant specification. Fig. 6, col. 8, lines 47-55, and col. 17, lines 31-39. See paragraph 7, supra.

(4) A developing device 4 that comprises a toner-carrying member 4a for transferring toner. See Fig. 6 and col. 8, line 56, to col. 9, line 19. Nagase further discloses that the developing device 4 also removes untransferred magnetic toner on the photosensitive member. Col. 15, lines 4-12.

(5) A transfer roller 5 that is within the structural limitations recited in instant claims 48 and 73. See Fig. 6 and col. 9, lines 20-31.

Nagase does not explicitly describe the amorphous silicon image-bearing member recited in the instant claims. However, as discussed above, Nagase discloses that its photosensitive member can be an amorphous silicon photosensitive member having a surface volume resistivity of approximately  $10^{13} \Omega \cdot \text{cm}$ .

EP'470 discloses an electrophotographic photosensitive member comprising an electroconductive support, an amorphous silicon photoconductive layer, and a "surfacemost" layer comprising an amorphous carbon hydride film. The surfacemost layer has a volume resistivity of  $4 \times 10^{13} \Omega \cdot \text{cm}$ , which meets the volume resistivity taught by Nagase. EP'470, page 14, lines 43-44, and page 24, lines 15-17. EP'470 discloses that the amorphous carbon hydride film has high hardness and high

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durability. The film has low friction and good water repellency. Image blurriness is prevented under high humidity even when a heater is omitted in the image forming member.

Page 14, lines 44-46. EP'470 also discloses that the "movement of the charge-promotion particles [in a contact-charging foam-containing roller] or other particles toward the photosensitive member [i.e., the image-bearing member] due to the mechanical friction can be suppressed." Page 6, lines 34-36; and page 14, lines 44-46.

It would have been obvious to a person having ordinary skill in the art, in view of the teachings of EP'470, to use EP'470's amorphous silicon photosensitive member comprising the surfacemost amorphous carbon hydride film as the photosensitive member in the imaging apparatus disclosed by Nagase, because that person would have had a reasonable expectation of successfully obtaining a durable imaging apparatus that provides images without blurriness, even under high humidity conditions, for a long period of time.

Neither Nagase nor EP'470 discloses the following functional limitations: (1) the image-bearing member is charged to a particular potential as recited in instant claims 48 and 51; (2) transferring a particular magnetic toner recited in instant claim 48; and (3) the functional language recited in

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instant claims 63, 64, and 68-72. However, the instant claims do not positively recite that the apparatus comprises the particular magnetic toner recited in the instant claim. For example, instant claim 48 merely recites "a toner-carrying member for transferring a magnetic toner" (emphasis added)," which does not distinguish the structural elements in the instantly claimed apparatus from those elements in the apparatus rendered obvious over the combined teachings of Nagase and EP'470. Furthermore, the recitation "image-bearing member . . . is charged to a potential of . . ." recited in instant claims 48 and 51, does not distinguish the structural elements in the instantly claimed apparatus from those in the apparatus rendered obvious over the combined teachings of Nagase and EP'470. In addition, a material (i.e., the magnetic toner) worked upon by the apparatus does not limit the apparatus claims. See the discussion in paragraph 15 above. Accordingly, functional language regarding the particular magnetic toner and the potential recited in instant claims 48 and 51, and the functional language recited in instant claims 63, 64, and 68-72 do not distinguish the apparatus rendered obvious over the combined teachings of Nagase and EP'470.

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19. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

20. Claims 48, 49, 51, 53-58, 60, 63, 64, and 67-73 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-26 of U.S. Patent No. US 6,576,387 B2 (Hashizume'387).

Although the conflicting claims are not identical, they are not patentably distinct from each other because the subject matter recited in the claims of Hashizume'387 renders obvious the subject matter recited in the instant claims.

Reference claim 10, which depends from reference claim 9, which in turn depends from independent reference claim 1, recites an imaging apparatus comprising:

(1) A photosensitive member that is within the compositional and structural limitations recited in instant

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claims 48, 53, and 54. The member comprises an electroconductive support, a photoconductor layer comprising a silicon-based non-single crystal material, and a "surface" layer comprising a non-single crystal carbon film containing at least hydrogen.

(2) A charging means for charging the photosensitive member comprising a charging member supplied with a voltage and in contact with the photosensitive member to form a contact zone with the photosensitive member. The charging means is a magnetic brush formed by magnetically binding magnetic particles having a volume-average particle diameter of from 10 to 50  $\mu\text{m}$ , which is within the compositional limitation recited in instant claim 48.

(3) A latent image-forming means for performing image exposure to form an electrostatic latent image on the photosensitive member. Hashizume'387's definition of the latent image-forming means is provided in Fig. 7, which comprises a semiconductor laser 710 system as the latent-image forming means. Col. 30, lines 21-28. The semiconductor laser system is within the scope of the definition of the latent image-forming means disclosed in the instant specification. See paragraph 7, supra.



(4) A developing means for moving a magnetic toner to the electrostatic latent image formed on the photosensitive member to form a toner image. Hashizume'387's definition of the developing means is provided in Figs. 4-7, which comprise developing assemblies comprising a toner-carrying member for transferring the toner. See Figs. 4-7, developing systems 406, 506, 606, and 704, respectively, and col. 30, lines 29-30.

(5) A transfer means for transferring the toner image to a transfer medium. Hashizume'387's definition of the transferring means is provided in Fig. 7, which comprises the transfer roller 706, which is within the structural limitation recited instant claims 48 and 73. See Fig. 7 and col. 30, lines 31-43.

Reference claim 11, which depends from reference claim 9, requires that the magnetic particles in the magnetic brush have a volume resistivity of  $1 \times 10^4 \Omega \cdot \text{cm}$  to  $1 \times 10^9 \Omega \cdot \text{cm}$  which meets the volume resistivity limitation recited in instant claim 67.

Reference claims 18 and 20, which both depend from reference claim 1, recite the apparatus as recited in reference claim 10, but require further that the charging means be a roller member having an Asker C hardness of 50 degrees or less, or a roller member having a volume resistivity of from  $1 \times 10^3 \Omega \cdot \text{cm}$  to  $1 \times 10^8 \Omega \cdot \text{cm}$ . The charging rollers recited in

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reference claims 18 and 20 meet the limitations recited in instant claims 48 and 60, respectively.

Reference claim 21, which depends from reference claim 1, requires that the developing means also serve as a cleaning means for collecting toner remaining on the surface of the photosensitive member. Said developing-cleaning means meets the limitation recited in instant claim 49.

Reference claim 13, which depends from reference claim 1, requires that in said charging means a conductive fine powder be interposed at the part of contact between the photosensitive member and the charging means. The limitation recited in reference claim 13 meets the limitation recited in instant claim 55. Reference claims 22 and 23, which depend from reference claim 1, recite the functional limitations recited in instant claims 57 and 58.

It would have been obvious for a person having ordinary skill in the art, in view of the subject matter recited in the claims of Hashizume'387, to make and use an imaging apparatus as recited in the instant claims, because that person would have had a reasonable expectation of successfully obtaining an imaging apparatus that is capable of being used in an electrophotographic process to provide toned image copies.

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The reference claims in Hashizume'387 do not disclose the following functional limitations: (1) the image-bearing member is charged to a particular potential as recited in instant claims 48 and 51; (2) transferring a particular magnetic toner recited in instant claim 48; and (3) the functional language recited in instant claims 56, 63, 64, and 68-72. However, instant claim 48 does not positively recite that the apparatus comprises the particular magnetic toner recited in the instant claim. For example, instant claim 48 merely recites "a toner-carrying member for transferring a magnetic toner" (emphasis added)," which does not distinguish the structural elements in the instantly claimed apparatus from those recited in the claims of Hashizume'387. Furthermore, the recitation "image-bearing member . . . is charged to a potential of . . ." recited in instant claims 48 and 51, does not distinguish the structural elements in the instantly claimed apparatus from those recited in the claims of Hashizume'387. In addition, a material (i.e., the magnetic toner) worked upon by the apparatus does not limit the apparatus claims. See the discussion in paragraph 15 above. Accordingly, functional language regarding the particular magnetic toner and the potential recited in instant claims 48 and 51, and the functional language recited in instant claims 56, 63, 64, and 68-72 do not distinguish the apparatus

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rendered obvious in view of the subject matter recited in the claims of Hashizume'387.

21. Claims 48, 49, 51, 53, 55-58, 60, 61, 63, 64, and 67-73 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-57 of US 6,596,452 B2 (Magome) in view of Ohba.

Reference claims 35 and 36 recite an image forming method comprising:

(1) charging an image-bearing member by applying a voltage to a charging member that is kept in contact with an image-bearing member thereby forming a contact zone between the charging member and an image-bearing member;

(2) electrostatic latent image forming an electrostatic latent image on the charged surface of the image-bearing member;

(3) developing the latent image with a magnetic toner that is carried on a toner-carrying member, which forms a developing zone with the image-bearing member, to form a toner image; and

(4) transferring the toner image to a transfer material "via, or not via an intermediate transfer member."

The toner-carrying member meets the developing means recited in instant claim 48.

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Reference claims 42 and 43, which depend from reference claim 36, further require that the charging member be a roller having an Asker-C hardness or a composition that meets the charging roller recited in instant claim 48 and 61, respectively. Reference claim 44, which depends from reference claim 36, requires that the charging member have a volume resistivity that meets the resistivity range recited in instant claim 60. Reference claim 57, which depends from reference claim 36, requires that the transfer member come in contact with the image-bearing member via the transfer material at the time of transfer. The transfer member meets the transfer means recited instant claim 73. Reference claim 37, which depends from reference claim 36, requires that the developing step further serve as a cleaning step of collecting magnetic toner that remains on the image-bearing member after toner transfer, which meets the functional limitation of the developing means recited in instant claim 49. Reference claim 36 and reference claims 38-41, 46, 47, and 54-56, which depend from reference claim 36, further require steps that meet the functional language recited in instant claims 55-58, 63, 64, 68, and 70-72.

The magnetic toner recited in reference claims 35 and 36 meets the compositional limitations of the magnetic toner recited in instant claim 48, but for the presence of both

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inorganic particles and electroconductive particles. However, reference claim 35, which recites the magnetic toner recited in reference claims 14-21, requires that the magnetic toner further comprise inorganic particles that are within the compositional limitations recited in instant claim 48. Reference claims 35, which also recites the magnetic toner recited in reference claims 22-26, requires that the magnetic toner further comprise electroconductive particles that are within the compositional limitations recited in instant claim 48.

Thus, it would have been obvious for a person having ordinary skill in the art, in view of the subject matter claimed in Magome, to add inorganic and electroconductive particles recited in reference claims 14-21 and 22-26 to the surface of the magnetic toner particles recited in reference claims 35 and 36, such that the resultant magnetic toner is within the compositional limitations recited in instant claim 48, and to use the resulting magnetic toner in the image forming methods recited in reference claims 35 and 36, because that person would have had a reasonable expectation of successfully obtaining an image forming method that provides repeatedly many magnetic toned images.

Magome's claims 35 and 36 do not recite that their image-bearing members are image-bearing members as recited in the instant claims.

Ohba discloses an image-bearing member comprising an electroconductive cylindrical support, a photoconductive layer comprising amorphous silicon, and a "surfacemost" layer comprising a non-single crystal material different from the photoconductive layer. Ohba discloses that its image-bearing member is charged to have an initial potential of 470 V or less, which meets the functional language recited in instant claims 48 and 51. The discussion of Ohba in paragraph 16 above is incorporated herein by reference. Ohba further discloses that its charged image-bearing member can be imagewise exposed by a LED head to form a digital electrostatic latent image. Col. 24, lines 4-7. The LED head meets the "electrostatic latent-image forming means" recited in instant claim 48. See paragraph 7, supra.

It would have been obvious for a person having ordinary skill in the art to use Ohba's image-bearing member comprising amorphous silicon as the image-bearing member in the method rendered obvious over the subject matter recited in the claims of Magome and to charge Ohba's image-bearing member to a potential of 450 volts or less in the contact charging step

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recited in said method and to image-wise expose the charged image-bearing member as taught by Ohba. That person would have had a reasonable expectation of successfully obtaining an image forming method that provides digitally-obtained, high contrast, high quality images without fog for a long period of time.

The reference claims in Magome do not recite an imaging apparatus. However, as described above, the imaging method recited in Magome combined with the teachings of Ohba recite structural elements that meet the structural elements recited in instant claims 48, 53, 60, 61, and 73, the functional limitation of the developing means recited in instant claim 49, and the functional language recited in claims 48, 51, 55-58, 63, 64, and 68-72. Thus, it would have been obvious to a person having ordinary skill in the art, in view of the subject matter recited in the claims of Magome combined with the teachings of Ohba, to make and use an imaging apparatus as recited in the instant claims. That person would have had a reasonable expectation of successfully obtaining an imaging apparatus that provides digitally-obtained, high contrast, high quality images without fog for a long period of time.

22. Claim 53 is rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over



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claims 1-57 of Magome in view of Ohba, further in view of EP' 470.

The subject matter recited in Magome combined with the teachings of Ohba renders obvious an imaging apparatus as described in paragraph 21 above, which is incorporated herein by reference.

The claims of Magome do not recite, nor does Ohba disclose, the use of an image-bearing member comprising a "surfacemost" layer comprising a non-single crystal carbon hydride film as recited in instant claim 53. However, Ohba discloses that its surface layer can be amorphous carbon, etc. Col. 16, lines 22-24.

EP' 470 discloses the advantages of a "surfacemost" layer comprising amorphous carbon hydride. The discussion of EP' 470 in paragraph 18 above is incorporated herein by reference.

It would have been obvious to a person having ordinary skill in the art, in view of the teachings of EP' 470, to use an amorphous carbon hydride film as the surfacemost layer in the imaging apparatus rendered obvious over the subject matter recited in the claims of Magome combined with the teachings of Ohba, because that person would have had a reasonable expectation of successfully obtaining an imaging apparatus that

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provides high contrast, high quality images without fog and blurriness for a long period of time.

23. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Janis L. Dote whose telephone number is (571) 272-1382. The examiner can normally be reached Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Mark Huff, can be reached on (571) 272-1385. The central fax phone number is (703) 872-9306.

Any inquiry of papers not received regarding this communication or earlier communications should be directed to Supervisory Application Examiner Ms. Claudia Sullivan, whose telephone number is (571) 272-1052.

JLD

1/17/04

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